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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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EXAMINER

MMC2/0330

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ART UNIT

PAPER NUMBER

2815

DATE MAILED:

03/30/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/343,293

Applicant(s)

Cheng Et.al.

Examiner

Edgardo Ortiz

Group Art Unit

2815

☒ Responsive to communication(s) filed on Jun 30, 1999

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1-20 is/are pending in the application.

Of the above, claim(s) 1-17 is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 18-20 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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DETAILED ACTION

This Office Action is in response to an application filed June 30, 1999.

Election/Restriction

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-17, drawn to a method of forming a microelectronic structure, classified in class 438, subclass 184.
 - II. Claims 13-20, drawn to a microelectronic structure, classified in class 257, subclass 412.
2. The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case unpatentability of the group I invention would not necessarily imply unpatentability of the group II invention, since the device of the group II invention could be made by processes materially different from those of the group I invention. For example, the microelectronic structure can be fabricated by providing a MOS transistor on which an extension of the source and drain regions is heavily doped.

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3. During a telephone conversation with Mr. Raymond Werner (Reg. No. 34,752) on March 21, 2000 a provisional election was made without traverse to prosecute the invention of a micro-electronic structure, claims 18-20. Affirmation of this election must be made by an applicant in replying to this Office Action. Claims 1-17 withdrawn from further consideration by the examiner, 37 CFR 1.142 (b), as being drawn to a non-elected invention.

4. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, the fields of search are not coextensive and separate examination would be required, restriction for examination purposes as indicated is proper.

5. Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

6. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(I).

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Claim Objections

7. Claim 18 objected to because of the following informalities: On line 7, the claims reads "a second implanted regions" when it should actually read "a second implanted region". Appropriate correction is required.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371© of this title before the invention thereof by the applicant for patent.

Claims 18-20 are rejected under U.S.C. 102 (e) as being anticipated by Kimura (U.S. Patent No. 5,883,418). Kimura discloses a semiconductor device with particular silicide structure. With regard to Claim 1, Kimura teaches a gate electrode (5) having sidewalls (9), a silicidation barrier (26) adjacent the sidewalls (9), a silicide layer (15b) adjacent to the gate electrode (5), a pair of source/drain terminals (6) self aligned to the gate electrode (5), wherein the source/drain terminals (6) comprise a first implanted region (7a), second silicide layer (16a), second implanted region (14a) and a third silicide layer (16b). See column 7, lines 1-51.

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With regard to Claim 19, Kimura teaches a second silicide layer (16a) is contained within the first implanted region (7a). See column 7, lines 1-51 and Figure 1.

With regard to Claim 20, Kimura teaches silicide layers (40, 41) thicker than each of the silicide layers (16a, 16b), thus it would have been an obvious modification to the structure to provide a silicide layer thicker than the first implanted region. The thicknesses of the silicide layers are considered to have been obvious to someone with ordinary skill in the art at the time of the invention, since variables of art of recognized importance which are subject to routine experimentation, optimization and discovery of an optimum value for a known process and changes in size or range are obvious.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Xiand et.al. (U.S. Patent No. 5,937,315) discloses a self-aligned silicide gate technology for advanced submicron MOS devices. Gardner et.al. (U.S. Patent No. 6,018,179) discloses transistors having a scaled channel length and integrated spacers with enhanced silicidation properties. Wu (U.S. Patent No. 5,982,001) discloses MOSFETS structure with a recessed self-aligned silicide contact and an extended source/drain junction.

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10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Edgardo Ortiz (Art Unit 2815), whose telephone number is (703) 308-6183. Any inquiry of a general nature or relating to the status of this application should be directed to the Group 2800 receptionist whose telephone numbers are (703) 308-0956 and (703) 308-4900.

EO/AU 2815

3/22/00


DAVID HARDY
PRIMARY EXAMINER